US Army Corps of Engineers®
Engineer Research and Development Center

Impacts of Dam Decommissioning

Problem

Decommissioning and removal of dams has become an increasingly common response to problems associated with dam infrastructure management, river conservation, and fisheries populations. However, little attention has been paid to the ecological and economic costs of dam removal. As a result, some removals have caused occasional but significant occurrences of released toxins or nutrients, channel instability, downstream sediment impacts, changes to invasive population distributions, and adverse hydrologic alterations, including open-water and ice-affected flooding.

Description

This research will develop alternatives analyses, lucid metrics for decision making, and a good understanding of ecological and water resources implications that consider analytical detail as a function of project scale. End products will be designed for use in efficient regulatory oversight, project development, and implementation of dam decommissioning projects.

Expected Products

This research will produce guidance for regulatory assessments, planning, and engineering and design of dam-decommissioning projects. The guidance will contain a checklist of technical issues and considerations associated with dam removal, introduce technical criteria for methods that may be employed to minimize and mitigate impacts, and provide improved capability for predicting ecological response. A review of case histories will present examples of actions likely to result in success or failure, identify available guidance and technical support, and serve as a basis for regional and site-specific evaluations with reference to support decisions. Technical reports, notes, and journal papers will be prepared as required for acceptance by the scientific and engineering communities.

Potential Users

Corps Regulatory, Planning, Project Management, Engineering, and Construction personnel will use the products of this research. Other users will include Federal, state and local agencies; watershed groups; and academia.

Projected Benefits

This research is expected to decrease the cost of conducting studies or evaluating regulatory projects involving dam decommissioning through increased efficiency in the planning and design of projects. Scientifically based alternative evaluation methods will help to prevent the adverse ecological and economic impacts associated with dam removals undertaken without these methods.

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